



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,835	05/19/2006	Kuniyoshi Yokoh	8075-1024	4083
466	7590	12/10/2009		
YOUNG & THOMPSON			EXAMINER	
209 Madison Street			MATZEK, MATTHEW D	
Suite 500				
Alexandria, VA 22314			ART UNIT	PAPER NUMBER
			1794	
NOTIFICATION DATE	DELIVERY MODE			
12/10/2009	ELECTRONIC			

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/562,835	YOKOH ET AL.
	<b>Examiner</b>	Art Unit 1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

1) Responsive to communication(s) filed on 22 September 2009.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

4) Claim(s) 1-10 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-3 and 6-10 is/are rejected.

7) Claim(s) 4 and 5 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 19 May 2006 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/06)  
Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_

***Response to Amendment***

1. The amendment dated 6/22/2009 has been fully considered and entered into the Record. The amended claims overcome the previous 112 1<sup>st</sup> and 2<sup>nd</sup> paragraph rejections. New claims 9 and 10 have been added. The amended and new claims contain no new matter.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear to Examiner what/where Applicant intends by “an emission part side of the surface of the second linear bodies”. Examiner has interpreted this limitation to mean between the first and second linear bodies.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Barrera et al. (WO 01/92381 A1). For easy referencing Examiner has relied upon the US PGPublication version (2006/0047052) of the WO document.

- a. Barrera et al. disclose a method of forming nanocomposite fibers comprising nanotubes embedded within a polymeric matrix (abstract). The nanotubes may be carbon nanotubes [0012]. The fibers may in turn be woven together [0011]. The nanocomposite fibers of Barrera et al. may be used to make electronics and electrical wires [0067]. The nanocomposite fibers may be diameters up to 150 micron [0160].
- b. For examination purposes, Examiner has equated the highly conductive carbon nanotubes to represent the claimed conductive layer of the first linear bodies and the conductive material of the second linear bodies. The polymer that surrounds the embedded nanotubes in the first linear bodies represents the claimed insulating layer. Barrera et al. disclose that the nanocomposite fibers may be woven, which provides for the claimed spatial relationship of claim 1.
- c. Although Barrera et al. do not explicitly teach the claimed feature of electron emission, it is reasonable to presume that said property is inherent to Barrera et al. Support for said presumption is found in the use of like materials (i.e. aligned carbon nanotubes that are known to be electron emitting). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barrera et al. (WO 01/92381 A1).

a. Barrera et al. fail to teach the use of different sized fibers in creating the woven article, however it would have been obvious to one of ordinary skill in the art to have used fibers of different diameters including second linear bodies with diameters of at most half of those of the first linear bodies motivated by the desire to have an article with biased structural properties including modulus, tear strength, etc.

b. Claims 2 and 3 are rejected as the polymer of the fibers may be removed revealing continuous fibers of nanotubes (abstract). One of ordinary skill in the art at the time of the invention would have found it obvious to have removed, dissolved, etc. the polymer of the second linear bodies motivated by controlling the physical properties of the overall woven article, such as electrical and thermal conductivities as well as mechanical properties. This woven fabric would have second linear bodies consisting of carbon nanotubes and said nanotubes would be present on a surface of cross parts of the second linear bodies crossing the first linear bodies at lifted portions and/or sunk portions of the first linear bodies because second linear bodies consisting of nanotubes would be touching the first linear bodies at the bodies points of intersection.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barrera et al. (WO 01/92381 A1) as applied to claim 1 above, and further in view of Smalley et al. (US 2003/0133865 A1) and Kochanski et al. (US 5,838,118). Barrera et al. fail to teach the use of the

applied article along with a light-emitting portion provided to face the electron emission of the article in a display device.

- a. Smalley et al. disclose the use of aligned nanotubes (abstract) for use in a variety of electrical capacities including field emission cathodes [0048] due to their conductive properties.
- b. Barrera et al. and Smalley et al. are from the same field of endeavor (i.e. aligned carbon nanotubes).
- c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used the aligned nanotube composites of Barrera et al. as field emission cathodes with the motivation of reducing the thickness of the overall display by shrinking the size of the cathode.
- d. Kochanski et al. disclose a display apparatus comprising an electron emitting article and a light emitting article that faces the electron emitting piece and illuminates when struck with electrons (col. 1, lines 60-68).
- e. Barrera et al. and Kochanski et al. are from the same field of endeavor (i.e. electrical devices).
- f. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have added the display and its light emitting portion to the article of Barrera et al. with the motivation of forming a display.

***Allowable Subject Matter***

6. Claims 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fails to teach or provide motivation to have the conductive layer comprise conductive polymer, while still being covered by an insulating layer.

***Response to Arguments***

7. Applicant's arguments filed 9/22/2009 have been fully considered but they are not persuasive.

8. Applicant argues that Barrera fails to teach the emission of electrons from the cross parts of the woven fibers. Although Barrera et al. do not explicitly teach the claimed feature of electron emission, it is reasonable to presume that said property is inherent to Barrera et al. Support for said presumption is found in the use of like materials (i.e. aligned carbon nanotubes that are known to be electron emitting). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594.

9. Applicant argues that the references combined with Barrera do not remedy the deficiencies of Barrera. Although Barrera et al. do not explicitly teach the claimed feature of electron emission, it is reasonable to presume that said property is inherent to Barrera et al. Support for said presumption is found in the use of like materials (i.e. aligned carbon nanotubes

that are known to be electron emitting). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW D. MATZEK whose telephone number is (571)272-2423. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571.272.1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew D Matzek/  
Examiner, Art Unit 1794

/Norca L. Torres-Velazquez/  
Primary Examiner, Art Unit 1794